

P-7.4 Summarize the operation of fiber optics in terms of total internal reflection.

Revised Taxonomy Level 2.4 Summarize conceptual knowledge
Students did not address this topic in physical science

It is essential for all students to

- ❖ Understand the process of total internal reflection
 - Understand critical angle
 - Understand how the index of refraction of the substance influences the critical angle
- ❖ Understand how fiber optical fibers are constructed to facilitate the process of total internal reflection
- ❖ Understand how fiber optics are used in familiar objects and applications

Assessment

The revised taxonomy verb summarize means “to abstract a general theme or major point” For this indicator, the major focus of assessment should be to insure that students have a deep conceptual understanding of the process of total internal reflection and its role in fiber optics. Conceptual knowledge requires that students understand the interrelationships among the basic elements within a larger structure that enable them to function together. In this case, that students understand process of refraction and how the factors that influence refraction affect total internal reflection.